

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 16985-WO-03	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/IL2004/001138	International filing date (day/month/year) 16.12.2004	Priority date (day/month/year) 22.12.2003	
International Patent Classification (IPC) or national classification and IPC A43D1/02, A61B5/107, A61B5/103			
<p>Applicant FITRACKS LTD. et al.</p> <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 6 sheets, as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application 			
Date of submission of the demand 19.10.2005	Date of completion of this report 21.12.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Herry, M Telephone No. +49 89 2399-8666		



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3 and 23.1(b))
 - publication of the international application (under Rule 12.4)
 - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-15 as originally filed

Claims, Numbers

1-12 received on 21.10.2005 with letter of 20.10.2005

Drawings, Sheets

1/3-3/3 as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages
 - the claims, Nos. 1, 8, 9
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

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ITEM I:

The amendments filed with the letter dated 19.10.2005 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following:

- Independent claim 1 now specifies that "said software ... integrates the results of said computed length and width of the feet with said diagnostic information obtained from said pressure pad to determine the appropriate shoe size for each of said feet". However, the application as originally filed did not mention that the diagnostic information obtained from said pressure pad is used to determine the appropriate shoe size for each of said feet (see p.11, I.1-5; p.13, I.17-23 and p.14, I.5-9). On the contrary the application as originally filed only mentioned that the pressure pads give "additional diagnostic information".

The same objection applies to feature (xv) of independent claim 8.

- In claim 1 the applicant has deleted the term "automatically" from feature (e). This feature, however, is an essential feature (p.3, I.6 and p.6, I.2).

The same objection applies to line 1 of independent claim 8.

- In claim 1 the applicant has deleted the features "elements of said light source/detector pairs ... moved ... along parallel axes located respectively on two opposing sides of said wells". This feature, however, is essential to allow the width and length measurements of the feet.

- According to claim 9 the computing steps (vii) and (xii) are carried out after step (xiv). No basis can be found for this feature. Claim 13 as originally filed indicated that steps (vii) and (xii) are carried out after step (xv).

Consequently the present report is established as if these amendments had not been made (Rule 70.2c) PCT).

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The present report is thus based on the combination of technical features which have a basis in the application as originally filed.

ITEM V:

Concerning independent claim 1:

- N: None of the cited documents discloses all the features of claim 1.
DE 83 08 980 U1 and US 2003/164954 A1 describe longitudinally and transversally arranged light source/detector pairs that are moved by motors to compute length and width of the feet.
US-A-5 659 395 discloses static arrays of light source/detector pairs and pressure pads.
- IS: The features of claim 1 provide an apparatus capable of analysing the optical length and width measurements and the diagnostic data given by pressure sensors, and having a simplified construction.

The skilled person would find no indication in the prior art, which would lead him to these features. In particular the person skilled in the art would not combine US-A-5 659 395 with DE 83 08 980 U1 or US 2003/164954 A1, because the movable light source/detector pairs of DE 83 08 980 U1 or US 2003/164954 A1 imply the presence of movable elements under the measurement base. Such a construction is not compatible with the provision of pressure pads under this plate.

Concerning independent claim 8:

The method of claim 8 comprises the same special technical features as the apparatus of claim 1 (Rule 13.2 PCT). The subject-matter of claim 8 is allowable for the reasons mentioned in the preceding paragraph.

Concerning dependent claims 2-7 and 9-12:

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These dependent claims disclose several preferred embodiments of the apparatus and method of claims 1 and 8, and therefore meet the requirements of Article 33(2), (3) and (4) PCT.

IA: The industrial applicability of the claimed apparatus and method is obvious.

New Claims

1. An apparatus for measuring parameters of human feet for the purpose of determining the appropriate shoe size for said feet, said apparatus comprising:

5 (a) a base, which supports the components of said apparatus that are necessary to carry out the measurements and comprises a depression in its upper surface into which said feet are placed when said measurements are carried out;

10 (b) a cover, which fits over said base to protect said components, said cover comprising an open area in its interior that essentially matches the shape and dimensions of said depression in the upper surface of said base, internal walls, and a bridge element all of which, together with said depression in the upper surface of said base, define the borders of two essentially rectangular wells into which said feet to be measured are inserted in order to carry out said measurements;

15 (c) a pressure pad comprised of a matrix of pressure sensors that covers the floor of said wells;

20 (d) two stepping motors, each of which, when activated, causes a pair of endless belts to move, wherein one end of the first of said belts is fitted over a first pulley located on the shaft projecting out from a first side of said motor and one end of the second of said belts is fitted over a second pulley located on said shaft projecting out from the opposite side of said motor;

25 (e) a light source/detector pair attached to each of said pairs of endless belts, wherein one member of each of said light source/detector pair is attached

to said first belt and the other member of said light source/detector pair is attached to said second belt;

(f) control means, which controls the activation of said stepping motors;

(g) counting means, which count the steps of the rotation of said shafts of
5 said stepping motors;

(h) memory means, which store the results of said counting; the signals from
said pressure sensors; and, optionally, other information required for the
determination of said parameters;

(i) computational means, comprising software for computing the length and
10 width of each of said feet from the data supplied by said counting means
and for determining diagnostic information from said sensors in said
pressure pad; and

(j) display means, which display said parameters and other pre-determined
information;

15 wherein,

- each member of each of said light source/detector pair is attached to its
respective belt such that proper optical alignment allowing the detector of each
of said pairs to detect light emitted from the source of said pair is established
and maintained when said belts move;

20 - activation of the first of said stepping motors causes the elements of the first of
said light source/detector pairs to move, without disturbing said optical
alignment, back and forth along lines that are essentially parallel to the
longitudinal symmetry axis of said wells;

- activation of the second of said stepping motors causes the elements of the second of said light source/detector pairs to move, without disturbing said optical alignment, back and forth along lines essentially parallel to the transverse symmetry axis of said wells; and

5 - said software in said computational means integrates the results of said computed length and width of the feet with said diagnostic information obtained from said pressure pad to determine the appropriate shoe size for each of said feet.

10 2. An apparatus according to claim 1, wherein the light sources are infrared emitting light emitting diodes.

3. An apparatus according to claim 1, wherein the detectors are infrared sensitive phototransistors.

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4. An apparatus according to claim 1, wherein the belts are timing belts.

5. An apparatus according to claim 1, wherein the control means, counting means, memory means, computation means, and the display means are an integral part
20 of said apparatus.

6. An apparatus according to claim 1, wherein at least a part of the control means, counting means, memory means, computation means, and the display means are

provided by a separate computation unit that is not an integral part of said apparatus.

7. An apparatus according to claim 6, wherein the separate computation unit is a
5 personal computer.

8. A method for using the apparatus of claim 1 to measure the maximum length and width of the feet of a human and to determine the appropriate shoe size for said pair of feet, said method comprising the following steps:

- 10 (i) providing an apparatus as defined in claim 1;
(ii) placing the feet in the wells with the back of the heel of each foot pressed against the inner wall section of each of said wells and the interior side of each foot pressed against the side of the bridge;
(iii) pressing a start switch activating the sensors in the pressure pad and initiating the measurement process;
15 (iv) activating the light source for making the length measurement;
(v) activating the control means to activate the first motor, thereby moving the light source/detector pair for making the length measurement;
(vi) activating the counting means and memory means, thereby counting and storing the number of steps of said first motor from the "home" position until the signal from said detector disappears as a result of the longest foot blocking the optical path and sending the data to the computing means;

- (vii) computing the length of the longest foot;
- (viii) turning off the light source for making the length measurement;
- (ix) activating the light source for making the width measurements;
- (x) activating the second motor to move the light source/detector pair for
5 making the width measurements;
- (xi) counting and storing the number of steps of said motor between the first disappearance and first reappearance and between the second disappearance and second reappearance of the signal from said detector resulting from the feet blocking the optical path and sending the data to
10 the computing means;
- (xii) computing the width of each foot;
- (xiii) turning off the light source for making the width measurement;
- (xiv) causing said motors to be activated moving the attached optical elements until a limit switch is contacted stopping the motion at the
15 respective "home" position of each motor;
- (xv) sending the signals from the sensors in said pad to the computing means, combining them with the length and width measurements in order to determine the most appropriate shoe size, and sending at least some of this information to the display means; and
- 20 (xvi) displaying the results of the measurements.

9. A method according to claim 8, wherein step (vii) and step (xii) are carried out after step (xiv).

10. A method according to claim 8, wherein steps (iv) to (viii) are carried out simultaneously with steps (ix) to (xiii).

11. A method according to claim 8, wherein steps (ix) to (xiii) are carried out before
5 steps (iv) to (viii).

12. A method according to any of claims 8 to 11, wherein the start switch is located on the computation unit and all steps of said method after step (iii) are carried out automatically under control of said computation unit.